Modelling Today's QR

by Arthur Hayes

In my session on Modelling Today's QR, I will cover some of QR operations over the last five years. During this time there have been various changes to the point where QRNational will be floated on the stock market some time this year. In this short period of time, some of the operations has come and gone. Who would have thought that 3900 class EL working the NCL would be replaced by 2800 class DEL's and Clydes back on the Sunlander.

First of all, I want to cover the management styles of QR over the years that puts us at today's railway. I'm sure most of us looking over the railway corridor fence will think that QR is just one big railway with a few other operators from another company running trains on the QR network.

Administartion over the years;
Thirty years ago, Queensland Railways was divided in Divisions. Managers were responsible for all operations regardless of train type. In this era, stations would accept a 1 lb parcel, one wagon load of goods, load sheep and cattle, sell tickets, look after your luggage as you travelled on holidays etc. Queensland Government Railways was a common carrier. Rollingstock was a mix of four (4) and eight (8) wheeled wagons made mostly of timber. These wagons were much smaller and carried must less than today wagons. Trains were the only way in and out of many locations around the state. Locomotive loads were just a couple hundred tons which required numerous trains each day to meet demand. This era is great to model, small trains and station yards with various sidings at every town that the line passed through. Today, there are various Business Groups.

Also, we need to understand how today's railway operate. These various Business Groups own their rollingstock. Traveltrain owns the A/C cars and the Tilt Trains. Containerised Freight has the container fleet, Infrastructure looks after the ballast wagons etc.etc but not all groups have locomotives to haul their trains. Regional Freight (QRNational) provides locomotives and crews to work these trains, Regional Freight is known as a Rail Operator, likewise Pacific National Queensland. This is called "above rail" activity. Managing and Operating the network (Track) including Train Control and track maintenance etc is a "below rail" activity.

Anyone can be a Rail Operator provided they demonstrate to the Regulator (Queensland Transport) that they can meet the requirement set down to operate trains on the network safely. Not all tracks are owned by the QR Network. Some sidings and locations the track ownership belongs to the Rail Operator which allows them to stow rollingstock without charge. Private companies using rail own their sidings and are known as Private Sidings.

Trains operate over the network in paths. These paths are worked out to allow trains to run with the minmium of delay. E.g. Trains running from Toowoomba to Brisbane don't sit at Rosewood for the morning peak etc. Rail Operators buy paths from the Network Manager. If your train runs

outside the path, it's a sick train and gets a go after all other trains. But, some trains get preference over other trains, i.e Passenger Trains.
The various Business Groups service their rollingstock at set locations around the state. QRNational wagons are serviced at Toowoomba and Townsville. Modifications are carried out at Redbank. Rockhampton looks after the Coal side of things except the SE Corner. Redbank, just like any other workshop business, tenders for work across all aspects of the rail industry.

So, at the end of the day, you can be the Network Owner/Manager, a Rail Operator, Business or Operational Manager of your railway, going by todays rules, you can do just about anything.

Having grown up at the end of the steam era, can today's QR be as interesting as past eras, how can we model today's railway systems? I think it can be done if we look around.

As we look at today's QR were can take a number of options.

Queensland Locations;
Let's look at the various trains that operate on the QR Network, e.g. Caboolture. The station still has various sidings which are used to stow Citytrain Units. Trains passing through the station include the Sunlander and other long distance passenger trains, Tilt Trains, Citytrain service to and from Brisbane /Nambour/ Gympie, Container Trains, Cattletrains, Molasses Trains, Ballast / Rail Trains and once a week a general slow freight service each way. Going north the train could be conveying 3700/3800 Electric Locomtives on delivery, wheel wagons, empty container wagons, empty sleeper wagons, loaded rail wagons, empty spoil wagons. Coming south the train could be conveying empty rail wagons, loaded molasses wagons, wheel wagons, Perth Unit on delivery, loaded sleeper wagons, empty container wagons. Some days the train may only have half a dozen wagons conveying wool. Also, Paciifc National Qld containers services go both north and south.

If we look a bit further north, say Bundaberg, there will be no Citytrain services - the rest is much the same.

North of Gladstone the freight services are similar, some additional container trains conveying chemicals run to the north. The big difference is the Coal Traffic running to the port of Gladstone.

Rockhampton north similar freight and long distance passenger trains which are all diesel hauled.

Around the Mackay area seasonal sugar traffic can be found operating to and from the port.

The Townsville area has the traffic generated from the Mt Isa Line with minerals, chemicals, fertiliser and cattle trains.

Above Rail: Train Operators Below Rail: Track, signals, train control

Like wise, as we head out to the west of the state, the three main trunk routes all carry different traffic. As above, the Mt Isa line, cattle, minerals, chemicals, fertiliser, coal/coke and some general freight along with the Inlander.

The Central West Line has the Spirit of the Outback, cattle and some general freight and grain trains, plus coal traffic to Emerald.

The South West Line is now predominantly coal from the Downs, the Westlander, and few grain trains and a small amount of general freight.

As we look over the railway corridor fence at today's railway, I see most trains are hauled by mulit unit locomotives which are 600/700 metres long. Coal trains in Central Queensland and some services on the Mt Isa Lines are much longer. In S Scale a 650 metre train would be over 10 metres or 33 feet long, and in HO the model would be over 24 feet long. Unless we have a big back yard, modelling trains this long is out of bounds for the average modeller with a layout in the spare room or in the garage.

As I look around the QRNetwork, I see smaller trains operating for various reasons. Earlier this year we had the wide spread floods across the state, e.g. the line west of Roma was closed for months, thus the freight service to the west was reduced to a 1720 loco and five (5) QLX's. Similarly, the Westlander was reduced with less box wagons. You can also have a power shortage, SEQ Coal trains worked by a single 2300 class locomotive, the load being reduced to 19 wagons. If the only available locomotive is only a 90 tonner, the load comes down more to about 11 wagons.

Likewise, on the North Coast Line, the weekly slow freight is different each week. Some days the service is no more than a couple of electric locomoties on delivery to the north and a couple of wagons. In February, 1620 ran to Gympie with 4 empy HASH wagons and returned to Brisbane with 4 loaded wagons. Similarly, the Fisherman Islands to Biloela container train, normally the train consist is about 32 two slot container wagons. In January, the train was running with 15 or 16 wagons conveying Bundaberg and Mt Miller loading only. The full length of the train was 311 metres, 3.5 metres in HO scale.

Around Brisbane Area;

Around the Brisbane Suburban Area there are still a couple of suburban shunts. From Acacia Ridge, 7F09/30 shunts Redbank, Normanby, Mayne, Banyo and Clapham. The other train 7F04 conveys locomotives to and from Redbank from Fisherman Islands. This shunt conveys locomotives from Fisherman Islands for Acacia Ridge and Mayne and picks up locomotives at these locations for Redbank and the other locations. From Redbank, the shunt takes locomotives from the Workshops and LMD back to Fisherman Islands. The locomotives are provisioned at Whyte Island and then are delivered to their respective location on the next run. The service runs twice daily. The most locomotives I have seen on this service were around 16 locos. At times 2600 and 4000 class locomotives are conveyed on this service. Locomotives coming from Redbank Workshop following an overhaul work the service from Redbank to

Fisherman Islands where various tests are conducted. Here you can have that brand new locomotive in pristine condition on the front of the train.

Locomotive shunt arriving at Acacia Ridge from Fisherman Islands. 2 x 3800 EL, 2470 Class, and 3 x1720 Class Locomotives in three different liveries.

Also, locomotives could be operating with faults, traction motors cut out etc, thus reduced load.

On Track Vehicles (OTV's)

When I look at today's railway, there is a never ending number and types of vehicles in this group that operate on the network. Likewise, the size of the vehicles also varies considerably. From small sleeper pulling machines, track inspection vehicles to recording vehicles, to tampers and regulars working together packing track. Then there are the rail grinders which come in various sizes which are equal to a small train of nine or so vehicles. We may not be able to model these vehicles in the working mode, but they do travel from location to location or worksite to worksite.

Standard Gauge Rail Grinder at Acacia Ridge

Most trains in today's railway don't stop at small towns to shunt or to drop off freight. They meet each other, cross and go. Some of the old building and track may still be in station yards, but not used as part of today's railway. If a train is to detach loading at a location, the wagons for the location are on the rear of the train. The train stops, the shunter cuts off the wagons listed for the location and the train departs. The shunt tractor or a loco will pick up the wagons and place them at the unloading/loading location. Each day the number of wagons allocated to each location is the same. On the return, the wagons are left in a road next to the loop/main line. The train loco will pick up the wagons and attach them onto the train. This is why we see empty wagons on trains, the same booking arrangements are there for every service.

Interstate Locations;

As most of you are aware, the rail network across Queensland is a narrow gauge system with a gauge of 3 foot 6 inches or 1067 mm. However, we aim to please everyone; there is a small section of approximately 160 kilometres of standard gauge to the New South Wales border. Trains running on this section of track are much longer with 1,500 metres paths available to Rail Operators. Trains running on the line include the daily XPT service to and from Sydney, Pacific National operate container trains to various destinations and steel trains which run to customer requirements, this could be three to four days a week.

Interail (QRNational) operate container services in and out of Brisbane 4 days a week. These services convey containers from Brisbane to Sydney, Melbourne, and Adelaide and onto Perth. These trains operate in a 1,500 metre path and are hauled by multi locomotives. Interail also run smaller services in regional centres in the southern states.

The rollingstock used by Interail is a good old mix of all sorts, starting with EL locomotives and a mix of container wagons leased for Chicago Freight Car Leasing Australia (CFCLA). Two, three and 4 Slot container wagons were used. Then they purchased a couple Freight Australia G and X class locomotives along with ex VR container wagons. Plus some Queensland narrow gauge rollingstock was transferred to standard gauge. Today, up front there are EDI leased LDP locomotives working the east coast.

Everything that comes "Down" goes back "Up" in train numbering terms, or I should say what comes up to Brisbane returns south. Generally, small trains are not a part of today's railway on this section of track. However, a few years ago, Interail did run a small containerised meat train from Casino to Fisherman Islands and return a few days a week. They also worked ballast trains until purchased by QR. As soon as you say things don't happen, it does. This week the Interail service arrived in Brisbane late and a swing set of wagons was used for the return service, 2 locomotives (LDP/G) and 19 wagons.

This now places a new aspect in modelling today's QR, Interail operating trains with locomotives in QRNational livery traveling the length and breath of Australia on the standard gauge network. Also, ARG is a QR company operating trains on the Mt Isa Lines and in Western Australia.

If shunting is your cup of tea, we need to look at the bigger locations. However, the size of most locations would be beyond the average modeller. In looking around, I think some industry in these bigger yards could be modelled as a separate layout.

That's a small summary of today's QR covering the last few years. In today's environment, things change quickly.

What choices do we have in modelling today's QR.

1. Scale, as always the bigger the scale, larger the space required.
2. Room, how much room do we have to build our layout.
3. Ready to run, kits or scratch build. Time we want to spend building your railway also comes into the equation.
4. What's the budget ???? Sorry, cash comes into most things today.

Modelling a Queensland Location.

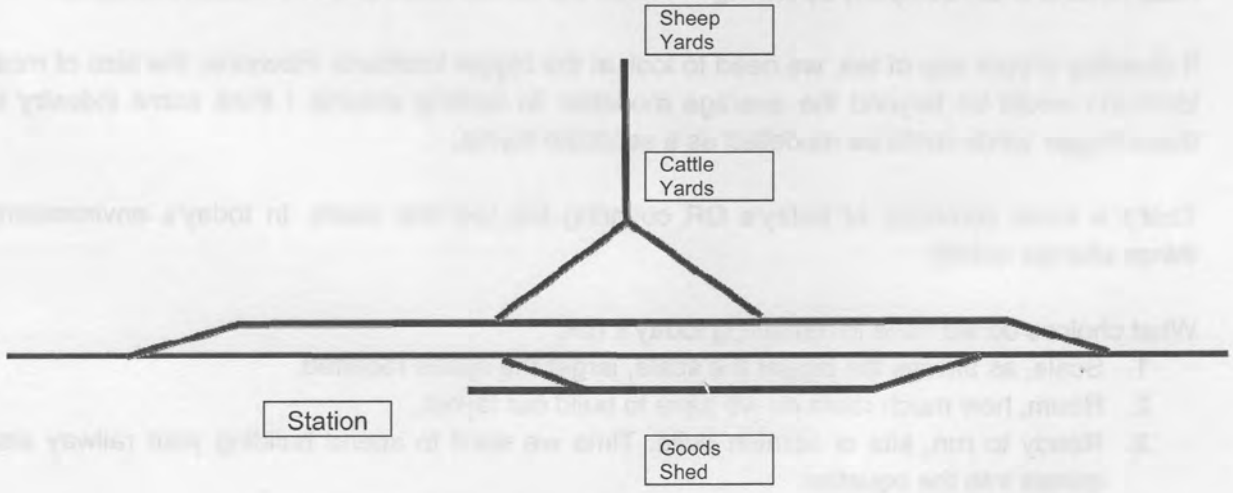
We can model a location or a section of track within Queensland. Forest Hill, and Fairfield are a couple of layouts that come to mind.

If we are modelling EMU, SMU's etc, it's 3 or 6 cars trains, Likewise, we can not shorten the Tilt trains. The ICE train can be 4, 5 or a 6 car train. When running electric traction some thought needs to be given to the Over Head Line Equipment. With the A/C trains, some may be too long for the smaller layout. Selective shortening could be the answer, where there are two cars the same, reduce it back to one. The make up of the train stays the same or you may choose to take out a particlar type of car or class of car.

Most locations will have a mix of trains, passenger and freight. For freight services you can, once again, selectively reduce the size of the train. Instead of running two locomotives and forty plus wagons, run two locomotives and twenty wagons. The front of the train remains the same and gives most the impression of as the real thing. At very few locations on the network do you see the full length of the train.

Or you can run a smaller service due to conditions that may be around at the time, like floods, service not running to all locations due to reduced demand.

The selected location will govern the types of trains that can be operated. If the area available is on the small size, you may select a location where smaller trains operate. For example, select a small western country town. Morven comes to mind, the station yard has the Main Line, Loop for crossing trains, a goods shed siding run off the Main Line near the station. And an angle comes off the loop. With some modeller's licence, the angle could be turned into a siding which runs beside the loop. The station building is timber and the goods shed is corrugated iron.



Morven

Trains could be a single or multi 1720's on freight service hauling 10 or 12 QLX type wagons. The 1720's are usually one of each type, orginal cab (63t) and a maxi cab (66t) locomtive. The

reason for one of each is that Cunnamulla Line can only take the 63 t locomotive, where as the 66t 1720 can go to Quilpie.

The Westlander can be hauled by a 2400 DEL, or any 90/93t locomotive, a couple of QLXP's and a small A/C consist. From time to time a roomette sleeping car (LAR) is added to the train for special tour groups. On the return to Brisbane, the QLXP's are not part of the train consist. A cattle train or two with a reduced consist could be run. You can also throw in the odd ballast or sleeper train, these can vary in length depending on the job size being carried out.

If you choose another part of the state where longer trains operate, a smaller scale may be considered, at times even with the smaller scale, selective reduction will be required if room is limited. I said I would never build a unit coal train; the club took on building a layout for QR to promote the Main Line Electrification Project. One member thankfully built the electric locomotive bodies, I built the 50 coal hoppers for the two trains. 25 wagons on each train were still far short of the 100 wagons being run at the time. Yes, the models were built in "N" scale or 1:160, in fact it was a standard gauge train. Likewise, you can get away modelling today's QR on HO track providing you choose carefully. After all, 2819 went from narrow gauge in Queensland to standard gauge to run between Brisbane and onto Adelaide for a time, and then back to narrow gauge in WA.

If you choose another part of the state, you could have Pacific National Queensland trains as well on the North Coast Line, similarly on the Mt Isa line where services are operated by ARG. In the near future, PNQ and P&O could be operating services on the Mt Isa Line.

Like all modelling and prototypes, freelance modelling can be considered. That is, no set location and your choice of trains. You are the CEO and the holder of the budget, thus it's your railway.

QR Models

Sorry, there are no ready to run (rtr) models available over the counter of the local hobby shop. Some kit suppliers will offer to supply assembled and painted models.

Some of the regular suppliers who stock rollingstock suitable for modelling today's trains:-
Horizon Hobbies, 45 Whimbrel Street, Warner Q 4500 www.horizonhobbies.com.au
PGC Scale Models and Wuiske Models in HO Scale.

Austral Modelcraft, 15 Fairland Street, Mt Gravatt East, Q 4122
Wuiske Models in HO Scale.

Suppliers of rtr Rollingstock to order.
Black Diamond Models, PO Box 118 Beenleigh Q 4207
Website www.blackdiamondmodels.com.au
Website shows the following rollingstock available.
HO Scale - 2300 DEL, SMU 220, Interail 423. S Scale – QLX/QFX

Rollingstock suitable for modelling today's QR.
PGC Scale Models. (HO Scale)
Wagons:- KL, QLX, VAK, VAKG, G, QSC, PYC, HO.
Wuiske Models (HO Scale)
Locomotives:- 1720, 2100, 2170, 4000
EMU's:- 1979
Wagons:- QFC, VAOW, VBO, HSA, KL, LSR, QLX, VAK, VAKG, VO, WHO, KOJX, VGH, BAZY, BCZY, BEZY, Various Tanks OBE/OCE, VSAS/VSAL, VCA.

Ian Lindsay Models. (HO Scale)
Locomotive:- 2170 DEL
Wagons:- PYC, QSC, R, QLX, HO.

Peter Boormans Workshop (N Scale)
Locomotives:- 1720
Wagons:- KSA, VO.

Modelling an Interstate Location.

With Interail locomotives being painted in QR National colours, today's QR can be modelled on the standard gauge network as well. Within the Queensland, there is the section of track between Acacia Ridge and the border. These container services continue south and west to Perth. Then there are the short haul container services between Sydney and Newcastle, Dynon, Altona and Horsham in Victoria. In the Hunter region of New South Wales there are the various coal contracts being hauled by locomotives in QR colours.

You choice here is endless, e.g. Standard gauge HO Locomotives hauling container trains passing the XPT or other trains operated by the various other Rail Operators using the network.

Just pick a location anywhere in Australia and Bob is your uncle. If room is an issue and you don't mind shunting, a selective reduction Altona could be the answer. The siding ran off the main line on a curve into three roads within the Terminal. There are also some smaller service roads into a shed. The service from Brisbane would arrive, the locomotives released back to Dynon and train was reversed/unloaded/loaded using CRT 73 class locomotive. Wagons for repairs were cutout and added as required. The Main Line locomotives would return later in the day and be attached to the train and work north. Sometimes it would be a different set of locomotives to the incoming ones. Trains coming into Altona were only about 20 wagons long. The location also loaded/unloaded a port shuttle services, PN "G" class locomotive would work this service.

In later days, when trains terminated at Dynon, the 73 class loco went to Horsham.

Services run from Sydney to Newcastle and vice versa to avoid shunting and congestion in the Sydney suburban area. The Yennora complex is used to unload/load trains. Other operators also use the yard. The yard consists of 6 roads, one way in and the same way out.

QR Interstate Models:-

The following ready to run models are available or on the drawing boards.
Austrains have indicated that they plan to produce CLP/CLF, X and G class locomotives in QRN colours during 2011. CLP/CLF has been produced in ARG colours and the X class likewise in Freight Australia colours.

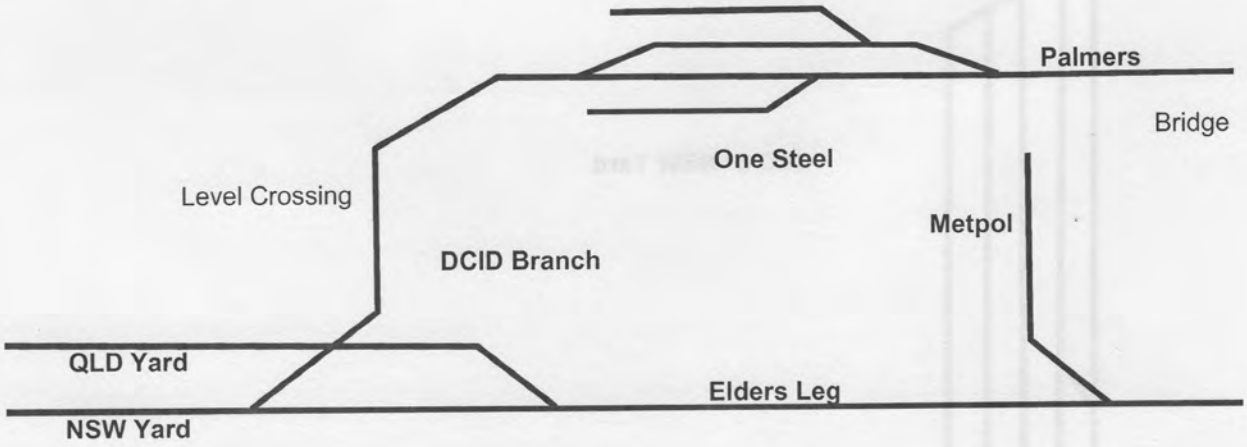
Auscision Models have produced the EL locomotives in CFCLA colours, likewise the CQBY container wagon. In the pipeline is the CRT 73 class locomotive. The 73 class locomotive at Yannora was in NSWGR colours.

Wuiske Models produce the QR BEZY container wagon. A number of these wagons were placed on standard gauge bogies and are part of Interail's wagon fleet as QQAY wagons.

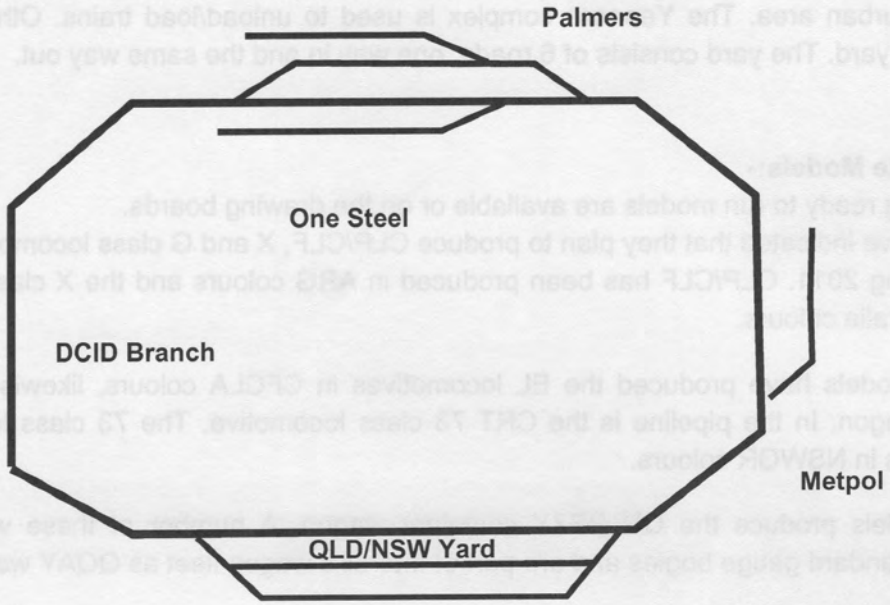
Acacia Ridge Layout:-

When I look around Acacia Ridge, I feel a good size layout could be built by joining a couple of branch type sidings together to form an oval. This would allow short trains and sidings to shunt. If room was an issue, a point to point could be constructed. The branches are single track and are dual gauge. Over the years, both QLD and NSW trains used the branches, today only PN shunt the sidings. With modeller's licence, one could build the layout in narrow or standard gauge and operate either Queensland or interstate trains.

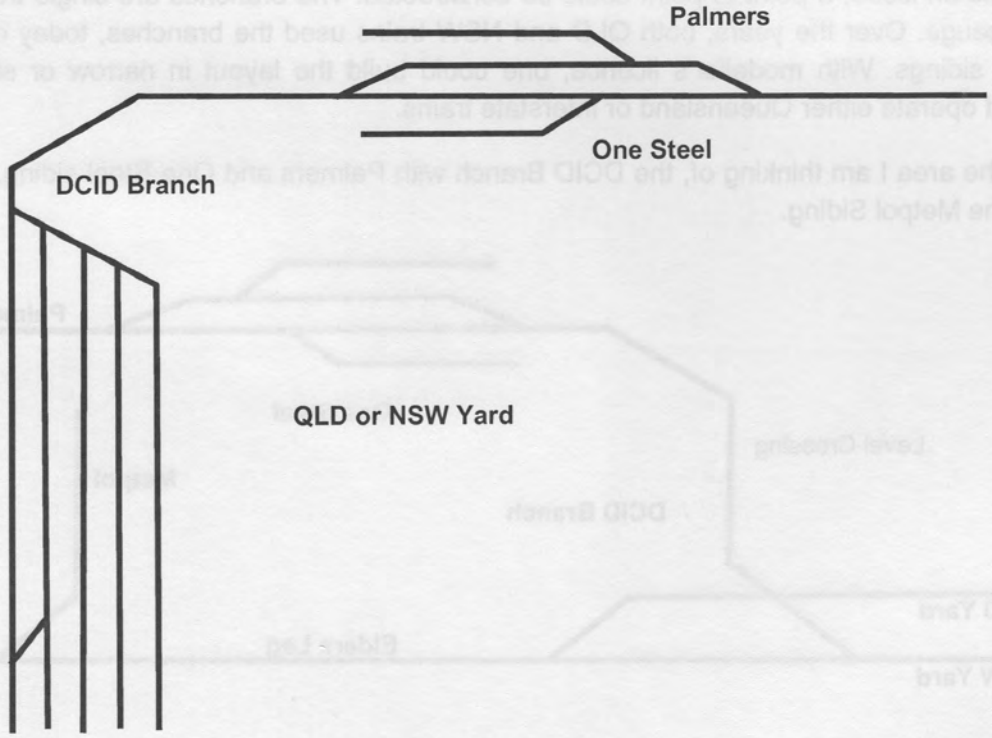
Below is the area I am thinking of, the DCID Branch with Palmers and One Steel siding, Elders Leg and the Metpol Siding.



Below, is a possible oval layout design that gives endless operation for a small train.



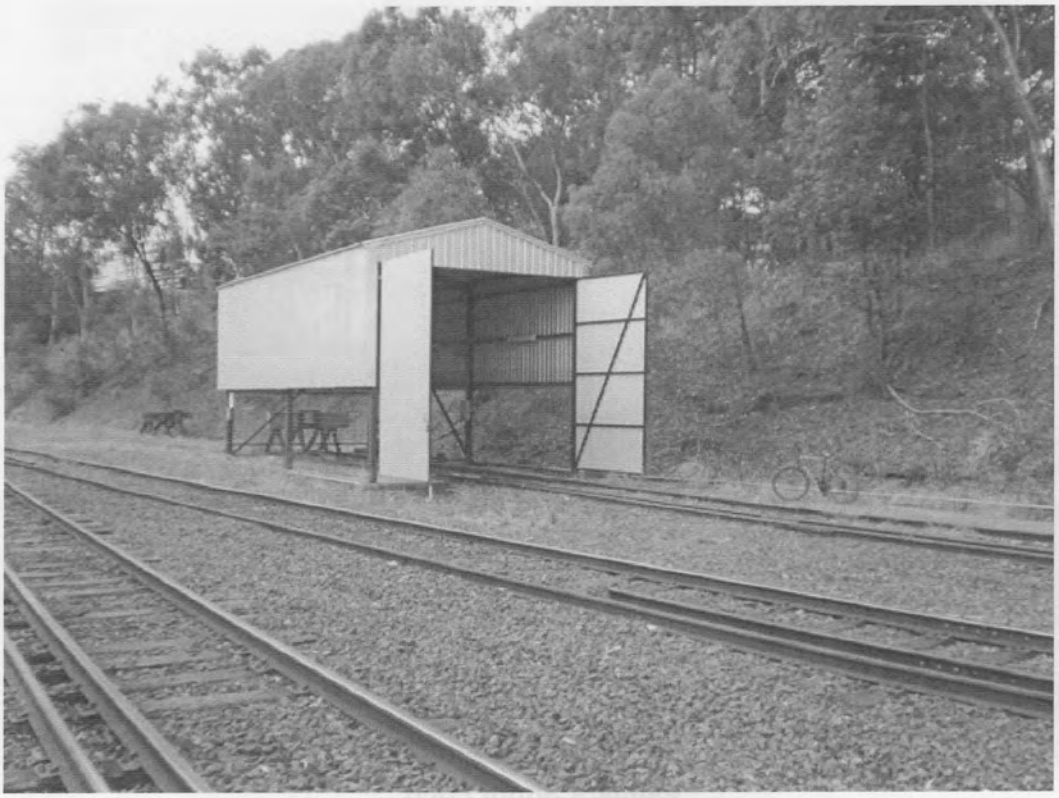
Below, a point to point layout design.



Palmers have a small shunt locomotive for placing wagons for unloading. As these names suggest, all sidings handle steel products of various types.

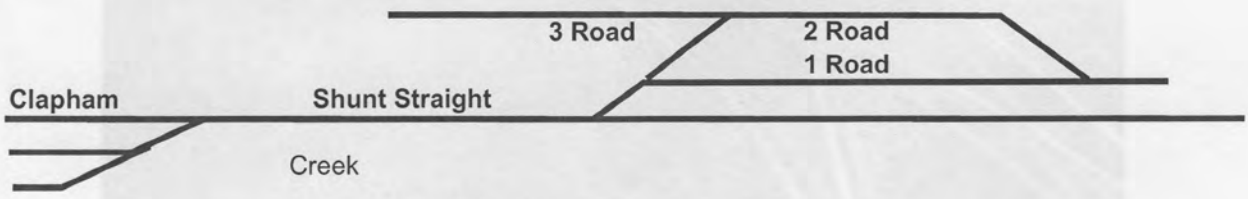
Palmers Shunt Loco.

One Steel siding on the Left, Palmers siding on the Right



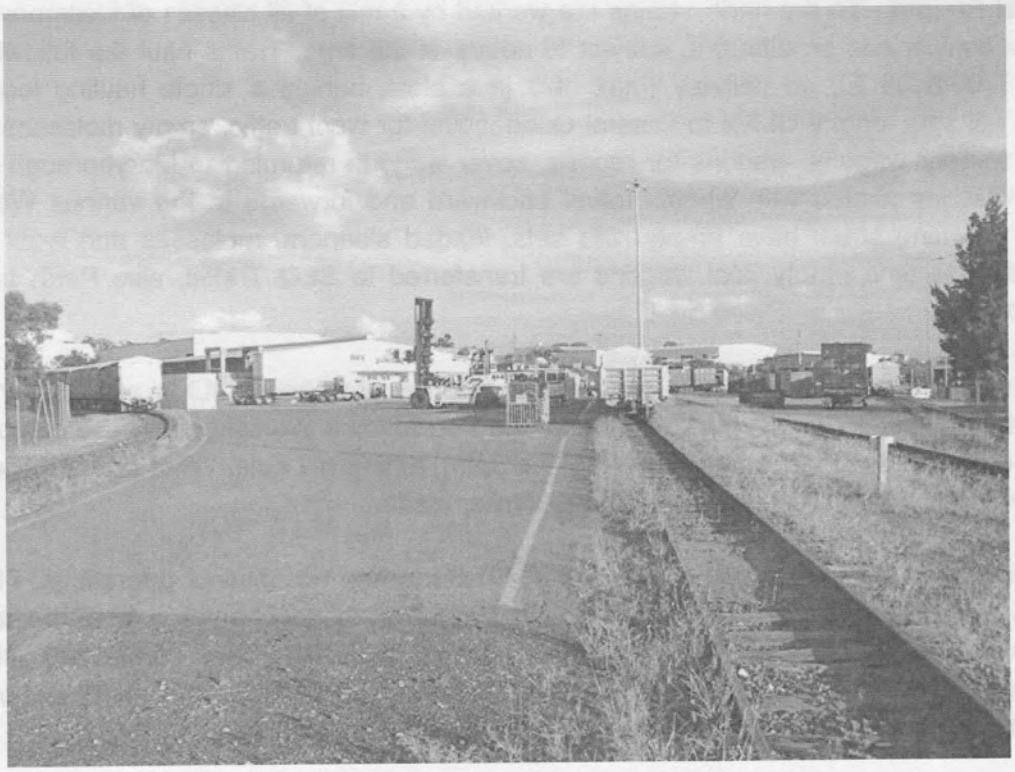
Palmers Loco Shed

Another complex that would provide plenty of shunting with small consists is the new Yeerongpilly Rail Welding Facility. Access to the plant is from Clapham via the daul gauge shunt straight/neck. All tracks in the complex are dual gauge and both QR narrow gauge and PN standard gauge trains shunt the siding. Short rail (27.5 metres) is unloaded from PN wagons. The rail is welded into 110 metre lengths and loaded onto QR rail set (RY/RYS/QR). From time to time, shorts are also loaded onto QR IROA/B wagons for Mackay for manufacturing of crossings and turnouts. Limited siding lengths only allow single shunt moves for each type of traffic. Wagons for short rails are pushed up by the locomotive, while the wagons for the long welded rails are pulled up behind the locomotive.



1 Road:- PN Shorts
2 Road :- Run around/QR Shorts
3 Road:- QR Longs

Rail Weld - Yeerongpilly



This corner location at Acacia Ridge provides 4 sidings for loading.

Train Types:-

When we look at today's trains, most fit into the Unit/Block train category. In other words, all the wagons are much the same.

In SE Queensland, train consists are as following:-

Coal:- 41 VAJQ/VAHQ/VAMQ/VAKQ hauled by 2 2300 Class DEL.

Molasses;- Arriving Brisbane consists of 40 wagons have come down the coast, hauled by 2 3900 EL, in later periods 2 x 2800 DEL or 3 x 90t DEL's. Generally, 2 DEL's haul about 32 wagons of the MO/OWO/VMO class. To the west, the trains consist of 20 wagons hauled by 2 x 90/93t locomotives, the same locomotives do both trips from and to Brisbane, one to Kingsthorpe and the other to Warwick.

Cattle:- Generally, trains are equal to 44 Decks, that is KOJX/PYCK class wagons hauled by a mini multi (90t/63t) Locomotives. The KOJX/PYCK's mainly run on the North Coast/Central West traffic. KLEX's run to and from Quilpie.

Grain:- Standard consist of 38 VGH/VGK wagons are hauled by 2 x 2300 DEL's .

General Freight:- To the north, trains are worked by a mix of all classes of locomotives. Each day the consist can be different, subject to needs at the time. Trains haul the following loads north, 3700/3800 EL on delivery (max of 3 in a block behind a single hauling locomotive), loaded rail sets, empty QLX's to Central Queensland for wool traffic, empty molasses wagons, empty sleeper wagons, wagons for repairs, cover wagons returning to Maryborough off Perth Units. Wagons loaded with wheels travel backward and forwards to the various Workshops. Trains returning south have empty rails sets, loaded sleepers, molasses and wool wagons. From time to time empty coal wagons are transferred to SEQ Traffic, also Perth units from Maryborough.

To the west, trains out of Brisbane can have a good mix of wagons. QLX's, side curtain wagons of freight for western towns, plus wagons for the Toowoomba Workshops. These can be QLX's, empty container wagons, ballast/spoil (VBO/HSA's), empty rail sets. What go "UP" must come "DOWN", thus the returned services convey similar loads.

Containers:- Container traffic in and out of Brisbane has two distinct operations, Fisherman Islands and Acacia Ridge. Trains from Acacia Ridge run to Rockhampton (shunts Gladstone), Townsville (shunts Mackay, Bowen, Ayr) and Cairns (shunts north of Townsville) using three slot container wagons (BCZY/BAZY/BEZY's). Train consist is between 27 to 32 wagons. 2800 class Del are the preferred locomotive, but anything can be up front.

Fisherman Islands is a different ball game - all wagons are two slots type and travel west and north. Goondiwindi trains are worked using PYC and PCUY class wagons. Tycanba (Dalby) use

mainly PCUY wagons. This train shunts Oakey and Toowoomba. Trains to and form the north, 6V33/6868 Biloela (shunting Bundaberg and Gladstone), this train in recent days has been removed and the shunt placed on the Rocky service, 8375/8374 to Rockhampton, and 8245/8844 to Townsville shunting Mackay. The Biloela and Townsville services are power trains for refrigerated containers. Trains very in size from single 2800 class locomotives to multi's hauling between 30 and 40 wagons.

Container Trains, both on the QR and Interstate Network give the modeler some opportunities. Containers come in various heights, lengths, types and colours. With the standard length of 20 foot or 6.1 metres, they could be used similar to the old four wheeled wagon. The wagon fleet stays the same, just change the containers, you have a different train every trip. Trains could convey containers of the same types or a mix. Just need a stock pile of containers.

Container Terminals don't have to be big, the one at Agents siding in Melbourne was one forklift working on ten (10) wagons. Some parts of the terminal were just a dirt surface, on dry days there would be dust everywhere. At the time, the siding was also being used by ARG coming from Adelaide. At Bundaberg, all containers are loaded by side lifter semi trailers.

Container traffic on today's freight trains is much bigger that this presentation and could be covered in various sessions.

To sum up, to model QR today, you must consider the scale, this will dictate the room necessary and the hip pocket nerve, larger the scale, more room and dollars required for a given project. Given the size of today's trains, room available will also limit what can be achieved. Be willing to give selective reduction to locations and trains. A location towards the end of the line could see reduced train sizes and facilities at the location.

At the end of the day, you are the boss, the operation of your railway is your call.

Trust you enjoyed the presentation and hope it has helped in providing some details that will assist you enjoy our great hobby.

All photographs by the author